

Galileo's Near Infrared Mapping Spectrometer (NIMS) Science Observations of Io

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The Gal i l eo spacecraft wi ll have compl et ed the encounter period of the thi rd orbi t. of its satel l i te tour by mi d-November 1996. Amongst Gal i l eo' s four remote sensing i nstruments i s NIMS, whi ch combi nes i maging and spectral capabi l i ti es, coveri ng the wavel ength range 0. 7 to 5.2 microns. NIMS i s used to map the composit i on and temperature of Io' s surface materi als, hot spots, and pl Limes, and to search for sel ected atmospheri c speci es.

Here we report the results obtai ned by NIMS during the early orbits, whi ch i nclude the closest approach to Io during the nomi nal mission. The NIMS data set consi sts of global composit i onal maps of Io' s dayside, global and part, - global thermal maps of Io' s nightside, monitoring of speci fi c hotspots at. intervals of less than one hour to 2 days, and searches for auroral effec ts on the nightside. NIMS data are used to reveal the temperature di stri but i on of Io' s surface and hot spot-s down to 180 K, and to map SO₂ and other speci es on a gl obal scal e.